UNITED STATES PATENT AND TRADEMARK OFFICE

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10/551,769	07/17/2006	Mikael Isaksson	1505-1085-1	5635

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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _15 April 2009_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-15_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-3, 5-12,14 and 15_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _03 October 2005_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments, see REMARKS, filed 4/5/2009, with respect to 35 USC

101 REJECTION have been fully considered and are persuasive. The 35 USC 101

REJECTION of CLAIMS 7-8 has been withdrawn.

Applicant argues that:

"Each line thus uses one duplex scheme and not a mixture of duplex schemes,

although different lines of a binder may use different duplex schemes. The

different duplex schemes (FDD, TDD, or Zipper) are compared when it comes to

what scheme that provides the best reach for different mixes of ADSL and VDSL

sharing the same binder."

Examiner Respectfully Disagrees:

Page 2(10) of Bengtsson, in particular figure 1, discloses Zipper coexisting with

ADSL. ADSL uses at least one of frequency division, time division, or echo cancellation

duplex schemes. Therefore, by having Zipper coexist with ADSL a mixture of duplex

schemes are used of which one is Zipper and another one is from the group of FDD,

TDD or echo cancellation. Since the schemes of Zipper and ADSL coexist therefore the

duplex schemes are used simultaneously.

Information Disclosure Statement

1.   The listing of references in the specification is not a proper information disclosure

statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other

information submitted for consideration by the Office, and MPEP § 609.04(a) states,

"the list may not be incorporated into the specification but must be submitted in a

separate paper." Therefore, unless the references have been cited by the examiner on

form PTO-892, they have not been considered (e.g. page 5 lines 18-22 the "Zipper

STANDARD", page 7 lines 22-23 the "Marc Kimpe's IEEE contributions on SHDSL").

Allowable Subject Matter

2.   Claims **4 and 13** would be allowable if rewritten to overcome the rejection(s)

under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of

the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1-15 rejected under 35 U.S.C. 103(a) as being unpatentable over **Madan**

("How DSL Works") in view of **Bengtsson ("Zipper Performance when mixing**

ADSL and VDSL in terms of reach and capability").

Madan discloses:

         Regarding claim 1, (original) a method performed in one single transceiver for allocating

transmission capacity between the two directions of transmission in wire line data communication

(see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; "example of an ADSL

connection from your home to your service provider's central office (CO)"),

comprising: the step of allocating **(i.e. giving; see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; having "voice transferred on lower frequency bands" and "data on higher frequency bands" thus allocating)** from said single transceiver **(see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; "ADSL connection from your home to your service provider" thus a single transceiver)** different parts of the available bandwidth **(see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; "frequency")** to different methods simultaneously **(see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; "echo cancellation" and "frequency division multiplexing")**.

Regarding claim 2, the method.

Regarding claim 3, (currently amended) method, wherein the step of allocating comprises allocating a first frequency **(i.e. low frequency band; see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; "lower frequency")** band comprising the lowest available frequency band to full duplex **(i.e. upstream/downstream; see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; "upstream" and "downstream")** with echo cancellation **(see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; "In echo cancellation, the upstream path overlaps the downstream path and the two are separated by a method called local echo cancellation")**.

Regarding claim 5, (currently amended) method, wherein the step of allocating comprises allocating a frequency **(i.e. low frequency band; see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; "frequency")** band for the highest of the available bandwidth **(i.e. high frequency; see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; "data on higher ones" in reference to higher frequencies for DSL such as "RADSL, HDSL, IDSL, SDSL, and VDSL" as disclosed on pages 1 and 2 of 4")**

Regarding claim 6, (currently amended) method, wherein the step of allocating comprises allocating a frequency **(i.e. low frequency band; see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; "frequency")** band of the available bandwidth **(see Madan; page 3**

of 4 "Continued from Page 1: How DSL works"; "frequency" thus containing available bandwidth)

Regarding claim 7, (currently amended) a computer readable recording medium with a computer program recorded thereon directly loadable into the internal memory of a processing means within a computer placed in a transceiver, comprising the software code means for performing the steps of claim 1 **(see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; using a "DSL" modem thus a modem containing low level and high level instructions embedded on a computer readable medium)**.

Regarding claim 8, (currently amended) a computer readable storage medium with computer program recorded thereon, executed by a processing means in a computer placed in a transceiver, to control an execution of the steps of claim 1 **(see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; using a "DSL" modem thus having a transceiver and encoded with low level and high level instructions on a computer readable medium)**.

Madan does not specifically disclose:

Regarding claim 1, where the different methods are duplex methods.

Regarding claim 2, using the Zipper technique for the data transmission.

Regarding claim 5, where the available bandwidth allocated to burst mode duplex **(It would have been obvious to one of ordinary skill in the art at the time of the invention to use burst mode duplex with VDSL as burst mode duplex is well known to be used with VDSL)** .

Regarding claim 6, allocation to TDD.

Bengtsson more specifically discloses:

Regarding claim 1, where the different methods are duplex methods **(see Bengtsson; "page 1(10) Abstract"; "Zipper performance has been compared with both a TDD proposal and a FDD proposal" and "concluded that when using the Zipper duplex scheme, VDSL can coexist with ADSL in the same binder" and "all studied mixes of ADSL and VDSL sharing the same binder")**.

Regarding claim 2, using the Zipper technique for the data transmission **(see Bengtsson; "page 1(10) Abstract"; "In this contribution we examined how the maximum reach vary at different bit rates on a VDSL system, when different numbers of ADSL and VDSL systems share the same binder")**.

Regarding claim 6, allocation to TDD **(see Bengtsson; abstract; "zipper performance has been compared with both a TDD proposal and a FDD proposal")**.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Madan, as taught by Bengtsson, thereby allowing the coexistence of DSL with ADSL in the same binder (i.e. cable) without significant degradation to each due to NEXT and FEXT **(see Bengtsson; Abstract)**.

Madan discloses:

Regarding claim 9, (original) a transceiver **(see Madan; page 3 of 4 "Continued from Page1: How DSL works"; "DSL transceiver or modem")** adapted to be positioned in communication sites of a wire line data communication system **(see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; "example of an ADSL connection from your home to your service provider's central office (CO)")**, said transceiver being adapted to transmit and receive data in the system **(see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; "connection from your home to your service provider's central office (CO)" thus transmitting and receiving data between transceivers)** and comprises a control unit (15) adapted to control the functions of the transceiver **(see Madan; page 3 of 4 "Continued from Page1: How DSL works"; "DSL transceiver or modem" thus containing a control unit)**, comprising: said control unit (15) is adapted to control the transceiver **(see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; "ADSL connection from your home to your service provider" thus a single transceiver)** to allocate **(i.e. giving; see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; having "voice transferred on lower frequency bands" and "data on higher frequency bands" thus allocating)** different parts of the available frequency bandwidth **(see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; "frequency")** to different ~~duplex~~ methods simultaneously **(see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; "echo cancellation" and "frequency division multiplexing")**.

Regarding claim 10, (currently amended) transceiver **(see Madan; page 3 of 4 "Continued from Page1: How DSL works"; "DSL transceiver or modem")**, wherein the control unit (15) is adapted to control an echo canceller (13) in the transceiver to only echo cancel signals received in the transceiver in certain predefined frequency bands **(see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; "In echo cancellation, the upstream path overlaps the downstream path and the two are separated by a method called local echo cancellation")**.

Regarding claim 11, (currently amended) transceiver **(see Madan; page 3 of 4 "Continued from Page1: How DSL works"; "DSL transceiver or modem")**.

Regarding claim 12, (currently amended) transceiver **(see Madan; page 3 of 4 "Continued from Page1: How DSL works"; "DSL transceiver or modem")**, wherein the control unit (15) is adapted to control the transceiver to allocate a first frequency **(i.e. low frequency band; see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; "lower frequency")** band comprising the lowest available frequency band to full duplex **(i.e. upstream/downstream; see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; "upstream" and "downstream")** with echo cancellation **(see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; "In echo cancellation, the upstream path overlaps the downstream path and the two are separated by a method called local echo cancellation")**.

Regarding claim 14, (currently amended) transceiver **(see Madan; page 3 of 4 "Continued from Page1: How DSL works"; "DSL transceiver or modem")**, wherein the control unit (15) is adapted to control the transceiver to allocate a frequency **(i.e. low frequency band; see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; "frequency")** band for the highest of the available bandwidth **(i.e. high frequency; see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; "data on higher ones" in reference to higher frequencies for DSL such as "RADSL, HDSL, IDSL, SDSL, and VDSL" as disclosed on pages 1 and 2 of 4")**.

Regarding claim 15, (currently amended) transceiver **(see Madan; page 3 of 4 "Continued from Page1: How DSL works"; "DSL transceiver or modem")**, wherein the control unit (15) is adapted to control the transceiver to allocate a frequency **(i.e. low frequency band; see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; "frequency")** band of the available bandwidth **(see Madan; page 3 of 4 "Continued from Page 1: How DSL works"; "frequency" thus containing available bandwidth)**.

Madan does not specifically disclose:

Regarding claim 9, where the different methods are duplex methods.

Regarding claim 11, using the Zipper technique for the data transmission.

Regarding claim 14, where the available bandwidth allocated to burst mode duplex (**It would have been obvious to one of ordinary skill in the art at the time of the invention to use burst mode duplex with VDSL as burst mode duplex is well known to be used with VDSL**).

Regarding claim 15, allocation to TDD.

Bengtsson more specifically discloses:

Regarding claim 9, where the different methods are duplex methods (**see Bengtsson; "page 1(10) Abstract"; "Zipper performance has been compared with both a TDD proposal and a FDD proposal" and "concluded that when using the Zipper duplex scheme, VDSL can coexist with ADSL in the same binder" and "all studied mixes of ADSL and VDSL sharing the same binder"**).

Regarding claim 11, using the Zipper technique for the data transmission (**see Bengtsson; "page 1(10) Abstract"; "In this contribution we examined how the maximum reach vary at different bit rates on a VDSL system, when different numbers of ADSL and VDSL systems share the same binder"**).

Regarding claim 14, where the available bandwidth allocated to burst mode duplex (**It would have been obvious to one of ordinary skill in the art at the time of the invention to use burst mode duplex with VDSL as burst mode duplex is well known to be used with VDSL**).

Regarding claim 15, allocation to TDD (**see Bengtsson; abstract; "zipper performance has been compared with both a TDD proposal and a FDD proposal"**).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Madan, as taught by Bengtsson, thereby allowing

the coexistence of DSL with ADSL in the same binder (i.e. cable) without significant

degradation to each due to NEXT and FEXT **(see Bengtsson; Abstract)**.

Conclusion

2.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to ADAM DUDA whose telephone number is (571)270-

5136. The examiner can normally be reached on Mon. - Fri. 9:30 a.m. - 7:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kwang B. Yao can be reached on (571) 272 - 3182. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ADAM DUDA/
Examiner, Art Unit 2416
10 October 2008

/KWANG B. YAO/
Supervisory Patent Examiner, Art Unit 2416